ZUYAO CHEN

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Education

Jan. 2022 – Dec. 2025	Ph.D. in Computer Science, The Hong Kong Polytechnic University (*PolyU*), supervised by Prof. Chang Wen Chen
Feb. 2025 – Sep. 2025	Visiting Scholar, ETH Zürich, Computer Vision and Geometry (*CVG*) Lab, supervised by Prof. Marc Pollefeys
Sep. 2017 – Jun. 2020	M.Phil. in Computer Science, University of Chinese Academy of Sciences (*UCAS*), supervised by Prof. Qingming Huang
Sep. 2013 – Jun. 2017	B.E. in Automation, University of Electronic Science and Technology of China (*UESTC*), Chengdu, China

Publications

- **Zuyao Chen**, Jinlin Wu, Zhen Lei, and Chang Wen Chen. "From Data to Modeling: Fully Open-vocabulary Scene Graph Generation". preprint.
- **Zuyao Chen**, Jinlin Wu, Zhen Lei, Marc Pollefeys, and Chang Wen Chen. "Compile Scene Graphs with Reinforcement Learning". preprint.
- **Zuyao Chen**, Jinlin Wu, Zhen Lei, and Chang Wen Chen. "What Makes a Scene ? Scene Graph-based Evaluation and Feedback for Controllable Generation". preprint.
- **Zuyao Chen**, Jinlin Wu, Zhen Lei, Zhaoxiang Zhang, and Chang Wen Chen. "GPT4SGG: Synthesizing Scene Graphs from Holistic and Region-specific Narratives". preprint.
- **Zuyao Chen**, Jinlin Wu, Zhen Lei, Zhaoxiang Zhang, Chang Wen Chen. "Expanding Scene Graph Boundaries: Fully Open-vocabulary Scene Graph Generation via Visual-Concept Alignment and Retention". In ECCV, 2024 (**Oral**, **Best Paper Candidate (15/8585)**).
- **Zuyao Chen**, Qianqian Xu, Runmin Cong, and Qingming Huang. "Global Context-Aware Progressive Aggregation Network for Salient Object Detection". In AAAI, 2020 (**Oral**).
- **Zuyao Chen**, Runmin Cong, Qianqian Xu, and Qingming Huang. "Depth Potentiality-Aware Gated Attention Network for RGB-D Salient Object Detection". IEEE Transactions on Image Processing (IEEE TIP), 2021. (**ESI Highly Cited Paper**)
- Qianqian Xu, Zhiyong Yang, **Zuyao Chen**, Yangbangyan Jiang, Xiaochun Cao, Qingming Huang, and Yuan Yao. "Deep Partial Rank Aggregation for Personalized Attributes". In AAAI, 2021.

Academic activities

- The winner of the STAR Challenge 2022 (ECCV workshop)
- Reviewer of CVPR, ICCV, NeurIPS, IEEE TCSVT, *etc.*
- Teaching Assistant of COMP2011, COMP2432, COMP5425, COMP5434, COMP5571, COMP6710

Research Experiences & Projects

Mar. 2023 – Nov.2023 **Expanding Scene Graph Boundaries: Fully Open-vocabulary Scene Graph Generation via Visual-Concept Alignment and Retention**
first author, advised by Prof. Chang Wen Chen *Hong Kong*
Developed *OvSGTR*, the first fully open-vocabulary SGG framework with visual-concept alignment and relation-aware pretraining. Accepted as oral presentation at ECCV 2024 (**Best Paper Candidate**).

Jun. 2020 – Dec. 2021 **Full-time Engineer at SMartMore**
deep learning algorithms training, inference *Shenzhen*
responsible for industrial products' defect detection, and build the tool-chains including training semantic segmentation, model inference acceleration via quantization, high-performance tools via CUDA.

Dec. 2019 – June.2020 **Intern at the SLAM group, Megvii**
working on deep learning *Beijing*
Built a codebase for semantic segmentation, especially human segmentation for robots' obstacle avoidance, including training the network using distributed machines and speed up the inference stage via CUDA and TensorRT.

Sep.2019– Nov.2019 **Depth Potentiality-Aware Gated Attention Network for RGB-D Salient Object Detection**
first author, advised by Prof. Qingming Huang *ICT, UCAS*
This work aims at addressing the two main problems in RGB-D SOD, i.e., how to efficiently integrate multi-modal information, and how to prevent the contamination from the unreliable depth map. The proposed approach outperforms 15 state-of-the-art methods on 8 benchmark datasets.

Jun.2019– Sep.2019 **Global Context-Aware Progressive Aggregation Network for Salient Object Detection**
first author, advised by Prof. Qingming Huang *ICT, UCAS*
Proposed a novel SOD network that interweaves low- and high-level features with parallel global context integration, enhancing salient region reasoning. Outperformed 12 state-of-the-art methods on 6 benchmarks.

Nov.2018– Dec.2018 **Intern at the Computer Vision and Multimedia Lab of JD AI Research**
advised by Dr. Hailing Shi *Beijing*
• Reproduced SOTA face recognition models (ArcFace, CosFace), achieving 99.80% accuracy on LFW.
• Co-authored a patent on face data cleaning for unmanned supermarket deployment.

Awards

2024 – 2024 **RSAP** & **ICRF** scholarships (HK PolyU)
2022 – 2025 Postgraduate scholarship (HK PolyU)
2017 – 2017 **Excellent Bachelor's Thesis Award**
2017 – 2017 **Outstanding Graduates** of *UESTC*
2016 – 2016 **Best Award for the Embedded Hardware Design** in the RoboMasters Summer Camp of SZ DJI Technology Co., Ltd.
2015 – 2016 **Runner-up** and **Best Technology Award** in the National trials for the 15th ABU Robocon Contest
2014 – 2015 **the First Prize** in the 10th Freescale Cup Intelligent Car Racing Competition for Undergraduates, west zone, China
2015 – 2016 **National Inspirational Scholarship**
2013 – 2014 **the First-class Scholarship**

Skills

Languages: Python, C/C++, CUDA
Frameworks: Caffe, PyTorch, TensorRT, HuggingFace
Tools: Linux, Git, Docker, LaTeX
Expertise: Deep learning, computer vision, scene graphs, generative models